

# Research, Engineering & Development (R,E&D) Advisory Committee

## Committee Report on Air Traffic Services Subcommittee Recommendations

March 5, 1999 letter to Administrator Garvey

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The Honorable Jane Garvey  
Administrator  
Federal Aviation Administration  
800 Independence Avenue, SW  
Washington, DC 20591

Dear Ms. Garvey:

The recent meeting of our R,E&D Advisory Committee and the work of our Air Traffic Services Subcommittee impels me to offer some thoughts of our Committee to you directly.

As always, the meetings have been informative and the obvious dedication of the briefers has been gratifying. Yet the meetings have been disturbing in several respects, - among them:

- a. the lack of any real long range research and development programs,
- b. the transfer of funds from R&D to F&D and Operations which further weakens and confuses the R&D program and
- c. virtually no focus on the major challenge of system and airport capacity, of which capacity-increasing technologies and procedures are a part.

Based on the priority being given to near-term system improvements, we note again that the current efforts are seemingly all directed at implementing things on which the real R&D was done years ago. These things need to be implemented rapidly and we support them enthusiastically. However, there appears to be little, if any, real R&D efforts associated with the integration of the near-term improvements to a more capable system for the future. There is acknowledgement within the FAA that the absolutely crucial work for the future is not being addressed. Without a vigorous R&D program, nothing will be ready to be implemented after Free Flight Phase 1. This lack of early planning could easily lead to a long gap in implementation of completed research. Our NASA friends have pointed out that NASA's research stops short of fieldable systems and requires important FAA R&D to complete the efforts if the NASA research is to be successful. Other outside the United States are doing meaningful R&D and the U.S. will inevitably lose its eminent role.

The R&D situation has been further aggravated by the shift of money to R&D and Operations. Congress moved most of the Air Traffic Management programs and all of the Airports technology programs to the Facilities and Equipment (F&D) budget, reflecting the emphasis on the near-term at the expense of the longer-term. With the R&D funding and responsibilities for implementation separated into so many different pots, the R&D management, focus and effort have been seriously compromised.

The new Architecture and the new Operations Concept, on which ARA and ATS have been working hard and effectively, are of limited value if they don't clearly show where we need to go – regardless of funding. However, without adequate funding, solutions will neither be achieved promptly or easily. The FAA should not indulge in the pretense that system modernization can be carried out with the present funding. Ms. Garvey, the FAA must find a way to convince Congress that the R&D budget must be increased. This budget issue requires exceptional action.

We were briefed on the development and active pursuit of a new "Architecture" tool (which is an overall planning and scheduling tool depicting the steps to NASA modernization) being developed by FAA with its TRW contractor. It is potentially a very powerful tool, and we strongly encourage its wide internal and external use. Further work is required to evolve the system to provide a time-phased architecture showing how specific products evolve to provide the service evolution, as well as work to define the metrics of resultant benefits. It may be tempting to some to downplay or hide this powerful tool, because it will show starkly the consequences of inadequate funding, inadequate organization and inadequate system engineering, but it deserves your strong support.

Several of us have the impression that the close melding of the ARA Architecture and the ATS Operations Concept, which has been a major and highly welcome FAA accomplishment, is perhaps unraveling a bit. There is great value and importance of them staying close and fully tracking in unison, just as it is important that the new "Architecture" tool remain in lock step with these activities.

We had a good briefing on the evolution of Flight 2000 (intended as a real life "beta test" of some of the new technologies) to SafeFlight 21. While this redirection is brand new, it is highly promising and we think it deserves strong support. While FAA is using RTCA as its advisory body on operational matters of Safe Flight 21, we stand ready to help on the R&D aspects of it.

The lack of adequate and enough technical competence in FAA remains a critical matter, one which can not be resolved by hiring more support contractors and external body shops – it requires a critical mass of good people inside the FAA. Additional good program and technical managers, system and software engineers are needed.

FAA and NASA are trying, at the top level, to work together a bit more closely that before. However, the union is not yet nearly close enough, especially since NASA has a substantial part of the available R&D funds. We know about, and support, the efforts of Steve Zaidman and Sam

Armstrong to bring the agencies together. As noted above, our NASA friends have pointed out that NASA's research stops short of fieldable systems, and requires an important FAA R&D effort. It will need unflagging attention from the highest levels in FAA – both ARA and ATS – if the money and efforts are to result in useful and timely products.

Finally, we urge you to reinstate and reinvigorate FAA's emphasis on our most challenging problem for the future – meeting the nation's needs for adequate system and airport capacity. We stand ready to help.

Sincerely,

Ralph Eschenbach  
Chairman, R,E&D Advisory Committee